MYRMECIA

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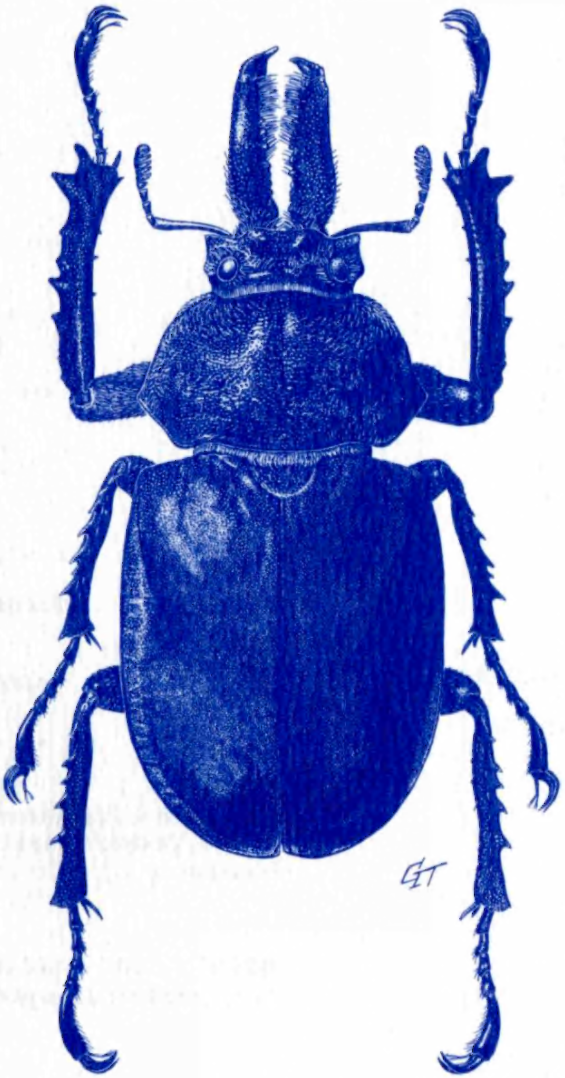

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THE COVER
Sphaenognathus (Australognathus) munchowae, a second Australian species of this Gondwanan Stag Beetle genus, recently described in the Memoirs of the Queensland Museum, by Barry Moore and Geoff Monteith. Illustration by Geoff Thompson, Queensland Museum.

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His Excellency, Major General Michael Jeffery AC CVO MC, Governor-General of the Commonwealth of Australia

SOCIETY SUSTAINING ASSOCIATES

Integrated Pest Management (Bugs for Bugs)

MYRMECIA

MYRMECIA WEB ADDRESS:

http://www.agric.nsw.gov.au/Hort/ascu/myrmecia/myrmecia.htm

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NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

COPY DEADLINE FOR NEXT ISSUE

Material for the May 2005 should reach **Tish Silberbauer** at tsilberb@bio.mq.edu.au by **Friday 15th April 2005**.

Please submit text as .rtf files, and pictures as 300dpi .jpg files.

EDITORIAL

In this issue I am happy to welcome **Sonya Broughton** (WA) and **Martin Steinbauer** (ACT) on board as regional councillors for their respective states. I think that the role that regional councillors play in the maintenance of the society is often under-appreciated. Without their enthusiasm, communications abilities and persistence in obtaining copy from society members there would be much less to see in *Myrmecia*.

This edition is somewhat slimmer than the previous edition; partly because I did received no news from NSW and Victoria. I know that most of Australia effectively shuts down (or goes into the field) for most of December and January, but I'm sure something interesting was happening. I spent part of my Christmas break sitting in the garden watching foraging blue-banded bees (*Amegilla cingulata*, Apidae) and the occasional teddybear bee (*Amegilla bombiformis*). I'm amazed by how strongly attracted blue-banded bees are to the colour blue, even to the point of buzzing a blue sheet that I was hanging on the line. It's a great treat to indulge in a little uncomplicated natural history now and then.

Dave Britton (Australian Museum) sent me a picture of a female specimen of the giant dragonfly, *Petalura gigantea*, from South West Rocks, NSW in January 2005. Dave had a look through the Australian Museum's collection and noted that there is a specimen collected from Trial Bay, South West Rocks in December 1929 by **Anthony Musgrave**, suggesting that the species has been present in the same locality for almost 80 years. This demonstrates an aspect of the historic value of maintaining collections. This species is of interest because it is listed under the NSW Threatened Species Conservation Act as a Schedule 1 endangered species.

If you have an interest in social insects the Australian section of the International Union for the Study of Social Insects (IUSSI) is now based in **Ben Oldroyd's** lab at the University of Sydney. They have a web page (http://www.bio.usyd.edu.au/IUSSI/) and are planning on putting together a symposium at the Invertebrates 2005 meeting in Canberra later this year.

Tish SILBERBAUER

Petalura gigantea from South West Rocks, NSW. Photo: David Britton

NOTICES

Members' email database

The database containing the email addresses of members is starting to get out of date with the number of extinct email addresses increasing. It is the responsibility of member to make sure we have your current e-mail addresses - otherwise you will not receive urgent messages or your electronic Myrmecia. Any updates should be sent directly to the Membership Secretary, Andrew Mitchell (Andrew.Mitchell@dpi.nsw.gov.au).

NEW MEMBERS

Elected 12 January

Leonie WITTENBERG, Mareeba Qld
Yasuoki TAKAMI, Kyoto University, Japan

RESIGNATIONS

Amy SNELL, Wellington South, NZ
A. CATLEY, ACT (see note in the Executive Report)

OBITUARY

John Greenslade; some additional comments

John Greenslade arrived at CSIRO Soils in Adelaide in early 1968 and his laboratory and home quickly became a place for people to visit. He had broad interests and published extensively in a wide range of subjects including ants, soil biology and evolutionary biology. His paper on pitfall trapping is typical of his thorough approach to his science and the need to make sure that what is measured is a real effect and not an artefact of the technique. He published well and his lifetime citations of more than 1,350 publications are those of a highly successful scientist. His papers ranged from natural history to the highly theoretical, demonstrating his broad interests. He published regularly with his wife Penny. The quality of his contributions is shown by his promotion to a senior scientist (level CSOF8) in CSIRO.

An influential idea in the search for understanding life-history patterns has been the concept of *r*, *k* selection. Basically species living in *r*-selecting, ephemeral habitats tend to be few in number but high in abundance and are highly vagile with short life histories; while *k*-selecting, highly favourable environments, where resources are not limiting, are more predictable, have a higher biotic diversity, smaller populations and more complex reproduction strategies. However these are two points on a continuum of selection. John, in an important paper to the American Naturalist, discussed evidence for a third type of **A**-selecting habitat operating in predictably adverse habitats. He illustrated this with ecosystems he was familiar with such as the arid zone of southern Australia and insects in logs. John was a generous friend with an original and creative mind, talents he has passed on to his children, Francis, William and Diana.

James RIDSDILL-SMITH

Greenslade, PJM (1983) Adversity selection and the habitat templet. American Naturalist 122: 352-365.

EXECUTIVE REPORT

Meetings: The Core Executive met on 1 November, 6 December and 12 January.

From the minutes

The Executive is pleased to announce that the two vacant Regional Councillor positions have been filled. **Martin Steinbauer** has been appointed to the ACT position and **Sonya Broughton** to the WA position. We thank Martin and Sonya for making themselves available for these valuable contact positions for the society.

Treasurer **Graham Thwaite** reported that renewal notices for subscriptions were posted to some 615 members in mid December. Dispatch was later than usual and the timing was less than ideal, bearing in mind that the "early-bird" discount was scheduled to expire on 31 December! Despite excellent instructions provided by the previous (Melbourne) Executive, we managed to find our own glitches in the system. Those who stretched the 31 December 2004 discount to 31 January 2005 won't have been penalised in view of the delay of the renewal notices. This latter date corresponds with the deadline for

those who prefer to receive the *Australian Journal of Entomology* electronically. Hopefully those who want this service will have responded by the due date.
Anyone who has a query about their individual notice should contact Graham by email (thwaiteau@yahoo.com.au), phone 02 6362 9498 (the number was incorrect in the Executive contact details in the November *Myrmecia*) or the address on the notice.
The Executive has accepted an offer from **John Jennings** to undertake an employment survey of entomology in Australia. John carried out such a survey a few years ago and this provided valuable information on who was doing what in Entomology in Australia. Results of the current survey may identify trends of value to current education initiatives of the Society (see below). John will fit the survey in around his current heavy workload during 2005 and we request that members give their cooperation to John in completing survey forms in reasonable time.

Affiliated societies

The Society has three affiliated Societies. Details of these, with links to their websites where available, have been added to the AES Website (www.austentsoc.org.au and follow the "Affiliated Societies" option). If any member of the Entomological Society of Queensland has an electronic copy of the Society logo, please forward it to murray.fletcher@agric.nsw.gov.au.

Education initiatives

Members will have received an email from **Dave Merritt** at the University of Queensland requesting input to a review of entomological education and training available in Australia and initiatives to augment these where possible. Members with an interest in entomological education or who have the ability to support these initiatives in other ways are urged to respond to Dr Merritt or to the Society Executive.
The Society is in the process of establishing an Education Committee and targeted invitations are currently being issued by the President. If you feel you should be considered for such a committee, which will be modelled on the current Conservation Committee, please contact the Secretary (contact details are on the inside front cover of this issue.
Letter from Mick Catley
The following note was received from Mick Catley in offering his resignation from the Society.
"Dear Geoff
After being a member of the Society since its inception, it is with mixed feelings that I am submitting this advice of my decision to resign from the Society and therefore I will not be renewing my membership for 2005.
It is quite a few years since I have practised as an entomologist apart from my continuing interest in the world around me and I feel it is now time to sever my formal links with the Society.
I wish you, your fellow office bearers and the Society continuing growth and success for the future.
Yours Sincerely,
A. Catley"
It is sad to lose members of such long standing but the Executive thanks Mick for taking the time to explain his decision and we pass on his good wishes for the Society to the membership. We wish Mick well for the future.

Murray FLETCHER
Chairman, AES Core Executive

AUSTRALIAN ENTOMOLOGY CO-OPERATIVE CURRICULUM

Background

Typically entomology courses throughout Australia are specialist courses with correspondingly small enrolments. However, the graduates go on to meet the needs of Australian industry. A disturbing trend is the steady reduction in the number of courses offered in entomology while the national interest is likely to see an increase in demand because of emerging issues such as ensuring biosecurity, assessing biodiversity, and assessing the impact of GMOs, in addition to the ongoing demand in integrated pest management, medical and veterinary entomology and other areas. This trend has come about because funding changes in Australian universities over the last decade have led to elimination of courses with small enrolments, income being generally based on a per capita model. In a harsh economic environment, the national interest is easily disregarded.
While irrefutable statistics on reduction of Australian entomological teaching are thin on the ground, the trend is clear: in the 1980s many Australian universities offered several insect-related course units at two levels, and a few (eg. UQ, Uni of Adelaide) offered such a broad selection of insect-related courses that it was possible to produce graduates with a comprehensive entomology major. Today that situation has changed and many universities have abandoned insect courses completely. Others offer only one or two units, usually at one level (typically third year Science or Ag. Science) and it is extremely difficult to undertake a 'classical' entomology major

degree with at least three insect units, all with a full practical component, in Australia. Only UQ offers a broad selection of second and third year insect units, only two of these offer a practical component, and now some of these also are under threat.

In response, some universities have chosen to offer some or all of their units in both undergraduate and postgraduate courses and by 'flexible delivery' (distance education), as this can improve productivity. However, there are down-sides that need to be addressed, particularly the difficulty in providing practical classes, really meaningful tutorials, and the unquantifiable but critical aspects of contact with teachers. Increasingly, providers of distance-ed courses are finding that delivering a quality outcome for students is much more difficult and time consuming than they (or more importantly their Deans) had expected. Hence, distance-ed can only ever be one component in the solution of the present entomology teaching problem.

Formation of a Co-operative Entomological Teaching Project

Recently a group of entomology teachers and end-users of entomology teaching was formed with the aim of initiating a high level of co-operation in entomological teaching and development of curriculum and teaching resources within Australian universities. An initial meeting was held in conjunction with the International Congress of Entomology (ICE) in Brisbane in August 2004 and its first workshop in Brisbane on 5 November 2004. At the initial meeting, the framework and topics for the workshop were proposed and a committee established with state representatives: **Mike Keller** (SA, Univ Adelaide); **Helen Spafford-Jacob** (WA, UWA); **Ary Hoffmann** (Vic, La Trobe Uni); **Nigel Andrew** (NSW, UNE); **David Merritt** (Qld, UQ); and **John Trueman** (ACT)

On 5 November 2004, a one-day workshop was held in Brisbane. Funding was generously supplied by the Australian Entomological Society, CSIRO/GRDC and the School of Integrative Biology, the University of Queensland. Eighteen entomology teachers and end users participated. The agenda consisted of and overview of existing courses, industry perspectives (view of two end users), possible models for cross-institutional courses, possible courses to be offered and their co-ordination, possible processes for course development, resources required, possible funding sources, and allocation of responsibilities.

End-user perspectives

Two end-user perspectives were provided by **Ian Naumann** and **Chris Orton**. Ian Naumann outlined the requirements of the Australian Government Department of Agriculture, Fisheries and Forestry, which is responsible for providing entomological services for the Office of the Chief Plant Protection Officer, Australian Plague Locust Commission, Biosecurity Australia and Market Access, and the Australian Quarantine and Inspection Service. Each of these organizations needs staff trained in a range of the courses outlined below, plus specific management skills extending well beyond entomology. 'Core' courses would differ depending on the focus of the particular organization.

Chris Orton outlined the recent history of Urban and Commercial Pest Management (UCPM) training in Australia and its proposed activities relating to PestCert and CPD. His perspective, drawn from experience in providing and appraising CPD events for UCPM and involvement in the NSW ITAB was that the UCPM industry is moving significantly to increase training requirements, that there is a realisation in the UCPM industry that more basic biology needed in training, and that there will be a need for more Australian graduate entomologists to teach UCPM in next 10+ years. He noted that there has been a significant reduction in biological expertise within companies marketing pest management products in Australia. There is a real need for UCPM teaching to be a factor in the planning of the co-operative entomology teaching project, and with that there is a need for a culture shift in entomological teaching to accommodate needs of UCPM teaching. It is not well-served by 'classical' teaching of entomology. The highest priorities for UCPM training are courses in basic biology, insect behaviour and pest management techniques. Educators need to be thinking; 'Part-Time', 'Remote-access', 'Web-delivered', 'Integrated' and 'Resource-pooling' for UCPM training, as is the case for the co-operative entomology teaching project. Both development of new teaching resources AND new teaching expertise are needed for UCPM training and the co-operative entomology teaching project.

Further end user perspectives are needed, but already the potential demand for entomological teaching beyond our present 'square' appears to be emerging.

Points of Consensus

The agenda of the workshop was very ambitious for a single-day meeting. Not surprisingly, not all of the items could be covered in depth so further

workshops will be needed before a clear pathway forward is achieved. Nevertheless, the group reached consensus that: the enhancement of existing options in teaching entomology is a common goal; increased sharing of resources is the best approach; ability to offer courses via remote delivery is desirable; there is a need to form cooperative groups for the development of specialized courses; courses should align with national priorities; core courses should be flexible so that they can be offered at multiple levels; a practical component is highly desirable in most courses – essential in some; there is agreement to explore funding options for course development; and that it is desirable that the Australian Entomological Society become involved in moving the initiative forward.

National Priorities

Several national priorities served by entomology were identified: an environmentally sustainable Australia; ecosystem services; sustainable pest management; climate change; biodiversity and conservation; promoting and maintaining good health; human health and welfare; safeguarding Australia; biosecurity and market access; asset protection; and animal health and welfare. A list of core courses was collated that match the national priorities. The courses do not serve the priorities on a one-to-one basis; rather the identified courses serve one or more priority areas.

Accommodating different target groups

It was agreed that given the attributes of flexible delivery, each course could provide the base material along with particular aspects tailored toward providing the desired outcomes for specific target groups. It was agreed that the courses should be developed so that they are flexible and able to be offered to different categories of students, for example, 3rd level undergraduates enrolled in BSc or BApplSc, research higher degree students or coursework MSc students, professional development of pest controllers (urban and rural), and overseas students.

The concept and benefits of a National Entomology Curriculum

It was proposed that significant benefits could be derived by developing a national entomological curriculum, based upon developing a suite of courses that ensure Australia's ongoing requirements for entomological expertise are met. This could ensure the availability of an accessible complete curriculum distributed throughout the nation rather than a few courses offered by each institution, none of which offers a complete set of courses. Courses that currently are threatened by low enrolments, or where cancellation is imminent, should see increased enrolments because they could draw on an expanded national and international pool of students.

All options require a commitment to development of material and mechanisms for flexible delivery. However, care would need to be exercised to ensure a balance is achieved between the uniformity imposed by a national curriculum and the diversity that exists in current courses because of the strengths and special expertise of the individuals who present them.

Marketing the benefits of the Project to our own university administrators

The surface was barely scratched on this key requirement but two benefits were forthcoming at the workshop: the potential to increase total insect units taught, as students (including local and overseas undergraduate and postgraduate students) perceive that a complete, co-ordinated entomological teaching pathway exists in Australia; and the potential to offer a broadened course offering within home universities by utilising course units offered by other universities. This is significantly enhanced where the units are delivered by distance-ed.

Where from here?

The next meeting of the group is planned for April 2005. In the meantime, working parties have been set up to progress the several tasks: develop course profiles and investigate ways of producing tailored, flexible components in each course (end February 2005 – designated course leaders); develop financial models for coursework delivery and circulate to attendees (end February 2005 – Hoffmann, Keller, Cribb); investigate funding models and circulate to attendees (end February 2005 – Naumann, Zalucki, Risdell-Smith); and report progress of working parties to April 2005 meeting (April 2005 – Merritt).

Dave J. MERRITT

BOOK REVIEW

Australian Psylloidea: jumping plantlice and lerp Insects by David Hollis. RRP $55.00 AUD. Published by ABRS, Canberra, 215pp.

Psyllids are a conspicuous element of the Australian arboreal insect fauna, particularly in relation to their radiation in conjunction with eucalypts and acacias. They have economic significance, cultural significance as "bush-tucker", aesthetic significance

in regards to the beautiful and elaborate lerps which are constructed by the immature psyllids, and environmental significance, particularly with eucalypt dieback issues. Although there has been considerable taxonomic work on Australian psylloids there has been little in the way of a general identification guide for the superfamily in Australia. Morgan (1984) published a general regional account of South Australian psylloids which has been of considerable use in south-eastern Australia, but there was still a need for a national coverage of the fauna. This compact spiral-bound book (A5 210 x 150mm) goes a considerable way towards rectifying this problem. The main body of the publication is dedicated to a key to the 57 Australian psylloid genera and a systematic catalogue of the 354 described species, as well as 21 unidentified species. In a refreshing change the excellent colour plates of lerps, larvae, galls, parasitoids, plant damage and adults are placed at the front of the book instead of the back.

These are followed by a brief introduction to the Australian fauna and associated literature, followed by chapters on biology, economic significance, collection and preservation, key characters, key to Australian genera, systematics, and host-Psylloidea associations. The chapters on biology and economic significance are concise, but have a considerable amount of information. Whilst this is a desirable outcome for a book of this nature it does mean that some of the paragraphs read more like a list of points than naturally flowing text. The biology chapter contains some excellent summaries of host-plant associations and parasite records, and the other sections on biology will provide non-experts such as this reviewer an introduction to the world literature on psylloid biology.

The short three page chapter on economic significance indicates that there is the need for future applied research projects on Australian psylloids and their natural enemies. As mentioned in this chapter serious outbreaks of *Glycaspis brimblecombei* and other psyllids have occurred overseas in the last ten years. This indicates that there may be further development of problems for offshore eucalyptus plantations due to incursions from Australian psyllids. Improving our knowledge of the biology of these insects may assist in control if these incursions occur. Due to the brevity of this chapter there are some omissions. For example the literature on eucalypt dieback and the association of psyllid populations with colonies of noisy and bell miners (*Manorina* spp.) does not rate a mention.

The collection and preservation section is likewise very brief, but encouraging for any novice collectors who are thinking about working on these insects. Unlike some other insects the preservation and slide preparation of these insects seems to be straightforward, and should pose little problem for those with a low-power binocular microscope and basic lab facilities.

The heart of this book is the key. The key is easy to use, and with a little practice this reviewer who had previously only keyed psylloids to family was keying reliably to genus. The majority of characters used in the key are illustrated by monochrome drawings or images. The author has made an effort to use characters which are easily visible under low power binocular microscopes, and which do not require dissection, and this has paid off admirably. There are very few ambiguities, most of which are created by the recycling of individual drawings and images for different key steps. For example, an illustration (Fig.44) on page 53 is used to illustrate transverse genal processes for a key step on page 52. These processes are indicated by a pair of white arrows on the image. The same figure is also used to illustrate pre-ocular sclerites for a key step on page 62. This has the potential to confuse the user of the key who thinks that the white arrows on the image are indicating pre-ocular sclerites.

The systematic catalogue matches the high standard that we have come to expect from ABRS catalogues. Users of previous Zoological Catalogues for other taxon groups will be familiar with the layout, and will appreciate the fine detail provided.

On the whole David Hollis has written a very neat and practical documentation of the Australian Psylloidea. I could not find any significant errors in the text, and the book is a credit to the ABRS production team. Whilst I have some concerns about the durability of the outer cover arrangement, the spiral binding will allow ease of use next to microscopes where hopefully there will be a new generation of keen psylloid identifiers at work. At $55.00 AUD the book is a bargain, and I expect many will be sold.

Dave BRITTON

Morgan, F.D. (1984) Psylloidea of South Australia. Adelaide, South Australia: Government Printer, 136pp.

BOOK REVIEW

A systematic catalogue of the Diaspididae (Armoured Scale Insects) of the world. By Yair Ben Dov and Victoria German. Price: US$164.00. Intercept Ltd, Hampshire. <Intercept@andover.co.uk> and <http://www.intercept.co.uk>

Books share an important characteristic with meetings – they are usually most effective when kept short and focussed. But what to do when the subject focussed on is vast? The publishers of my favourite edition of *The Brothers Karamazov* solved this by issuing that great story in two small volumes, each of which can be read whilst propped-up in bed. In contrast, this catalogue of scale insects runs to 1111 pages each of 9 x 6 inches – and at 2 inches thick it turns the scales at over three pounds. Clearly not bed-time reading, and one's first reaction is "which door should it be used to prop open?". But there are 118 genera and 864 species in this insect family, and with many of them pestiferous the group has been the basis of many an entomological career. The bibliography of over 4000 references occupies 200 pages, and the entries for some of the more frequently studied species occupy over 20 pages. It is a huge and scholarly mine of information. But therein lies a problem. Faced with 15 pages of general citations to the pest species, *Diaspidiotus perniciosus*, arranged alphabetically by author and each with key-words indicating content, how do I find a recent reference to chemical control, or ecology, or a good illustration? The answer is simple – all of this information is already accessible on *Scalenet* <http://www.sel.barc.usda.gov/scalenet/scalenet.htm>. You have heard of 'the book of the film' – well this is the book of the web site. If you need any information about Diaspididae, a quick visit to *Scalenet* will give you all that is in this book. The book itself, nicely printed and bound for Intercept Ltd, a specialist publisher that has a meritorious involvement in entomology, is essentially for archival purposes. Had it been published on cd-rom then a copy would be on my own shelf, because the information on host plants, distributions and parasites is so valuable. However, whilst using the electronic version for research, since we know that the printed word has a long shelf life you should ensure that this remarkable volume is purchased and suitably shelved by your entomological librarian.

Laurence MOUND

Carcinothrips leai (Phlaeothripinae) demonstrating some of the bizarre morphologies in *Acacia* thrips

BOOK REVIEW

Evolution of ecological and behavioural diversity: Australian *Acacia* thrips as model organisms. By B.J. Crespi, D.C. Morris and L.A. Mound and a Botanical Annexe by B. Maslin. Price AUD 55.00. Australian Biological Resources Study/ Australian National Insect Collection, CSIRO, 2004. < http://www.deh.gov.au/biodiversity/abrs/publications/special/thrips.html>

Most of the time "thrips" conjoures images of much despised garden and greenhouse pests, plant viral vectors extraordinaire and represented to the world by species who excel in developing resistance to insecticides. It is a shame that because of the notoriety of a few species the rest of this diverse order is more-or-less ignored by the general entomological community. Crespi, Morris and Mound, who between them represent much of the world's expertise on thrips taxonomy, ecology and

behaviour, have put together a book that will help to redress this imbalance.

The subject of the book is a single lineage of phytophageous phlaeothripids that has radiated on Australian *Acacia* to more than 250 described species in 30 genera, many of which are described for the first time in the taxonomic section of the book. This is radiation is sufficient to create a model system rivalling the radiation of cichlids in Lake Victoria. This radiation presents many research opportunities associated with being able to explore evolution and speciation within a manageable taxonomic and ecological framework.

The book is divided into three sections – the ecology and evolution of *Acacia* thrips, a botanical annexe, and the taxonomy of Australian *Acacia* thrips. This might seem odd, but it manages to convey a deeper understanding of the depth and complexity of the thrips-*Acacia* system. It does this by being more than a taxonomic catalogue, or an account of the sociality and ecology of the group, by bringing these aspects together along with an annexe on the classification and phylogeny of the plant genus on which the thrips depend.

It is the unusual social behaviour, morphology and speciation of this group of animals that is the centre of the book. The thrips in question have radiated into four general suites of species: gall-inducers (some with defensive 'soldier' castes); species that glue phyllodes together; parasites of these two types of domicile-formers and opportunistic species using old domiciles or other microhabitats. The book includes fascinating descriptions of each of the groups, and investigates the evolutionary and ecological processes that have led to such behavioural, morphological and taxonomic diversity.

I found the concept of a model clade as set out by the authors attractive and, certainly, the authors' application of the concept is impressive. I look forward to other researchers following the example set in this book in exploring model clade concept. This book won the 2004 Royal Zoological Society of NSW Whitley award for Best Evolutionary Text, in my mind a well-deserved accolade. The publishers and designers are to be congratulated on this beautifully presented book.

This book will be of interest to a broad audience, including behavioural ecologists, evolutionary theorists, taxonomists and ecologists and at AUD$55 for this hard-cover, A4 book is easily affordable.

Tish SILBERBAUER

DVD REVIEW

Best Friends Natural Enemies 2nd edition

Dan Papacek's biological control business, "Bugs for Bugs", has issued a new edition of this interesting DVD. For anyone concerned with extolling to a resistant public the merits of IPM and the use of natural enemies to control pests, this product is worth having. It runs for 20 minutes, and discusses classical biological control practices, mass-rearing and release of beneficials, population monitoring of pests and beneficials, and cultural practices, with particular emphasis on citrus. The insect photography is excellent, and will be valuable teaching material in schools and colleges, and the general tone of the discussions is practical and down to earth and directed at growers and farmers. The excellent footage of our lately deceased colleague, Dan Smith, will be of particular interest to many members of AES. The DVD is available through www.bugsforbugs.com.au.

Laurence MOUND

RESEARCH REPORT

Is *Blaps polychresta* a pest?

The following is based on reports produced by two year-11 students as part of a CSIRO Student Research Scheme. **Tina Hi** is from St George Girls' High School, Kogarah, and **Lizzy Gan** is from Sydney Girls' High School, Surry Hills, and they were supervised by **Martyn Robinson** at the Australian Museum, Sydney.

The Egyptian Beetle, *Blaps polychresta*, is endemic to Egypt and Syria, and at one time was considered to be related to the Egyptian Scarab Beetle. Introduced to Australia, it is now widespread in the outback, usually in grain silos and dark shelters. Because of its association with grain, this large black beetle is considered to be a pest, at least as a contaminant and general nuisance grain silos. Approximately 3cm long and with extremely long legs, the adults run fast and hide when threatened. They can also eject a malodorous brown liquid, and thus leave a distinctive smell and stain in areas they occupy.

As information about these beetles seemed to be limited, tests were conducted to learn more about the species and its behaviour. The study, which was limited to adult beetles, aimed to look for differences between the sexes, to determine their food preferences, to examine the effect of different lighting levels, and to check for any difference in activity between day and night.

Food: Weighed samples of three foodstuffs were exposed in petri dishes to the beetles overnight, and weight differences in the morning were assumed to represent feeding preferences. The three foods were an apple core, rat dung, and wheat grains, and the food taken preferentially was the rat dung.

Sexual dimorphism: Because males and females could not be distinguished by eye, mating was observed and the two sexes then segregated. As a result, males could then be recognised by their longer, more defined and protruding, forked tail, and by the presence of an orange glandular area on their ventral surface. The colony was thus recognised as including 19 males and 22 females. When males were isolated from females they exhibited aggressive behaviour, suggesting that they might be territorial.

Territoriality: Several new beetles were marked with white paint and placed randomly within the main culture. These new beetles had not previously met the beetles in the experimental tank. No aggressive behaviour was observed between the two groups, and mating occurred between them, suggesting that there is little territorial defence.

Light sensitivity: Half of a sheet of glass, 15x25cm, was painted black, and this was left with the beetles overnight. This resulted in them consistently aggregating beneath the darker area.

Diurnal activity: The beetles were found to be much more active at night than during the day.

Scent attraction: Paper towels were placed beneath aggregations of the beetles. These towels were later collected and taped to one side of a closed container with clean paper towels taped to the opposite side. The beetles clearly aggregated at the paper towels that bore their own scent.

Conclusions: The beetles are not specifically attracted to the grain in silos, but feed preferentially on rat droppings rather than whole wheat. This suggests that they are not a primary pest, but are attracted to silos by the presence of rats. Because of this, the beetles might be used as an indicator of the presence of rats or other rodents in and around silos. The beetles prefer conditions of low light intensity and are most active at night. Moreover, they produce a strong scent that results in aggregation. If this scent could be reproduced synthetically it might be useful as a lure to attract and destroy the beetles around grain silos.

Acknowledgments: Many people, apart from their supervisor, helped the two students: **Noel Starick** of CSIRO provided contact details and suggestions; **Glen Dunn** of ABB Grain, South Australia provided the beetles; Pets Paradise of Centrepoint Arcade provided the rat and rabbit dung; and Pets World of Mid City Centre provided mouse dung. Staff at the Australian Museum provided facilities, and **Chris Reid** dissected the male beetles to confirm their sex.

Laurence MOUND

Martyn Robinson with Lizzy Gan and Tina Hi

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

ABRS

2004 closed with publication by Australian Biological Resources Study of *Australian Psylloidea, Jumping Plantlice and Lerp Insects* by **David Hollis** (NHM). ABRS hopes that this very useful handbook will stimulate further research on this important group of insects. This was the second entomological publication from ABRS for 2004, and together with the *Evolution of Ecological and Behavioural Diversity: Australian Acacia Thrips as Model Organisms*, by Crespi, Morris and Mound, reflects clearly the new emphasis in faunal publications from ABRS. These publications illustrate the diversity of particular groups of animals (the Psylloidea book includes a checklist of known species and a list of host associations); both include information on biology of the animals and identification keys, and both are clearly targeted to specific audiences. Another interesting first for ABRS was the release, on CD, of a monograph on Australian Acanthodrile

earthworms by **Geoff Dyne** and **Barrie Jamieson**. This review of the Acanthodrilinae (Megascolecidae) includes discussions of relationships; illustrated descriptions of species, many of them newly described; and diagnoses of genera. All of these products are available on order through the ABRS website.

Also available on the ABRS website in the *Australian Faunal Directory* are numerous checklists for groups of Australian insects. Coccoidea and Chalcidoidea were two large groups added in 2004. The Tenebrionidae (compiled by **Eric Matthews** and **Patrice Bouchard**) will be added very soon.

Several days before Christmas **Karl Kjer**, and two colleagues from Rutgers University, New Jersey, US, called by and lunched with **Lynn Cook**, **David Morris**, **Laurence Mound** and **Alice Wells**. They were here in Australia collecting Trichoptera and Odonata for phylogenetic studies. Curiously, they seemed surprised to discover that ANIC houses the major collection of Australian Odonata.

When the rain finally cleared in East Gippsland in the last week of December, Alice managed successfully to make a small collection of two new hydroptilid species from one of the very humic small coastal streams.

Alice WELLS

Australian Plague Locust Commission

After being associated with the CRC for Sustainable Production Forestry since February 1992, **Martin Steinbauer** joined the Australian Plague Locust Commission (APLC) in late October 2004.

Martin is learning the ropes of being the Locust Forecasting and Information officer from **Paul Walker** who has had 5 years experience in this role. Part of the duties of this position include keeping landholders, state counterparts and the public advised of locust populations within the region the APLC is directly responsible for (and to a lesser extent regions bordering this vast area that may influence populations within this area). Two of the APLC's main means of achieving this task include the website (www.daff.gov.au/aplc) and the Locust Bulletin (available via html or as a pdf document from the website).

The APLC models locust population development and forecasts the movements of adult locusts on a monthly basis during the locust season by using Bureau of Meteorology data in two purpose-built models, one for the development of Australian plague locust (*Chortiocetes terminifera*; utilising DYMEX v2 and based on data obtained since research on *C. terminifera* began in the 1960-1970's) and another for migration (developed by **Alastair Drake** and **Wayne Rochester**). Data concerning the size of locust populations and their stage of development in different locations, which are used in these models, are sent to APLC headquarters in Canberra by APLC field-staff operating throughout inland NSW, Qld, SA and northern Vic. Each field-officer, equipped with hand-held PC, GPS, satellite phone and car radio and familiar with standardised locust monitoring protocols, relays verbal and/or electronic information to HQ up to twice-daily when on survey. Real-time data on locusts are vital given the ability of the insect to respond to changes in its environment and its migratory nature so that forecasts are realistic and useful to readers. Martin would like to urge ALL entomologists, especially younger entomologists with an interest in insect population dynamics and management, to view the website and read the latest bulletin. Monitoring and management on this scale is only undertaken for a limited number of naturally outbreaking insects throughout the world, e.g. Mountain pine beetle in north America and perhaps a few other forest insect pests in northern Europe.

The present locust situation in parts of NSW and Queensland is among some of the most spectacular seen for a number of years. The APLC and other agencies have already conducted major spray campaigns aimed at population suppression (NOT eradication) during the spring of 2004. The APLC and other agencies are now gearing-up to conduct yet more spraying of a second generation of locusts. However, to fully appreciate the scale of the present plague you will just have to visit the website and get yourself a copy of the Locust Bulletin for January 2005.

Martin STEINBAUER
ACT Regional Councillor

NORTHERN TERRITORY

Northern Australia Quarantine Strategy

The dry season is typically the time to catch up on lab work after the busy survey period during the wet. This gave **Glenn Bellis** some time to attend both the International Congress of Entomology (ICE) and the 9th Arbovirus Research in Australia Symposium in nearby Noosa the following week. Both provided excellent opportunities to catch up with old friends and meet some people previously only known by reputation. **Glenn** managed to spend a couple of days with **John Donaldson** at QDPI and hosted a visit from leafhopper guru **Mike Wilson** on his way back to Wales.

Department of Business, Industry and Resource Development
Entomology Section

Brian Thistleton, Graham Brown, Stuart Smith and Deanna Chin attended the International Congress of Entomology (ICE) in Brisbane in August. Stuart and Deanna submitted a paper on grower adoption of integrated pest management in tree crops. All four were overwhelmed with the size of the venue and the number of delegates that attended. It was also a good opportunity to see thousands of entomologists at one venue.

Prior to the Congress **Tracie Jenkins** (Univerisity of Georgia), **Susan Jones** (Ohio State University) and **Scott Kleinsmidt** (BASF) visited Darwin to collect termites for taxonomic and DNA studies. Brian and **Michael Neal** took them on a collecting trip to Katherine, and they also had discussions with Graham.

Following ICE, Professor **Yoshimi Hirose**, from Kyushu University, spent several days at Berrimah Farm working with **Lanni Zhang** on *Thrips palmi* predators.

Brian and Michael Neal are continuing with their termite trials in Darwin, Katherine and Ti Tree (near Alice Springs). **Heather Wallace** is assisting Brian and Michael with life cycle studies on *Conogethes pluto* which is a major pest of ornamental gingers. Recently Heather has fought off mosquitoes and leeches in her efforts to sample infested alpinia canes and to test pheromone traps.

Megan Hoskins was a runner-up in the 2004 Rural Women's Award that included a bursary from RIRDC. Megan took this opportunity to attend a short course on soil biology at the Southern Cross University. The studies concentrated on the association between soil biology and plant health. Megan will use this knowledge to assist her own work and may become involved with future studies on biological farming and how this can assist in suppressing plant pests and diseases.

Deanna and **Haidee Brown** have recently visited Megan in Katherine to complete a field trial on the effect of thrips on developing mango fruit. Deanna, Haidee and **Gerry McMahon** (Horticulture DBIRD) held an integrated pest management workshop for rambutan growers in early October.

Graham is continuing with his work on the taxa table for AQIS. Graham gets the occasional break when he is required to do an inspection on an illegal fishing vessel for exotic termites and borers. Lanni has been assisting with these inspections but has lately become seasick!

The Section launched their new website in July and this can be viewed at www.entomology.nt.gov.au

Department of Health and Community Services, Medical Entomology Branch

There have been a few staff changes in the branch. **Raelene Whitters** has been appointed to the new position of data and information officer, **Matthew Shortus** to the exotic vector surveillance officer while **Gisi Lamche** is on maternity leave, and **Bill Pettit** ex CSIRO has been appointed as the project manager of the *Aedes aegypti* eradication project in Tennant Creek. The branch also has a new Administration officer **Tamara Pearce.**

The organisation of the Dengue Mosquito (*Aedes aegypti*) eradication project in Tennant Creek has kept both Bill Pettit and **Peter Whelan** busy over the last few months. Results of trapping in mid winter by Bill have shown the mosquito is still present, despite the first round control operation in Feb-March. Bill visited Tennant in October to finalise plans and evaluate the recent town clean up operation.

Alan Warchot, has been busy with the biting insect reports of the new Black Tip gas development project and the Trans territory Pipeline, as well as inspections with Peter for the mosquito control engineering projects for this year, which are well under way around Darwin.

Peter Whelan, Bill Pettit and **Nina Kurucz** delivered papers at the Arbovirus conference in Noosa in August and Peter continued to the Biting Midge conference in Hervey Bay. Peter and **Leah Stratford** also attended the WA mosquito control training conference in September to respectively help with the course and as a student.

Jenny Grigg has been steady at routine identifications and surveys but broke the routine with a fly survey with Alan on a continuing house fly problem at the turf club. New guidelines were put into place to attempt to reduce the problem, while Peter fielded media queries about the seasonal blow fly problem and their wheelie bin source.

Nina Kurucz, Jane Carter, Jenny and Matt have completed the first round of helicopter mosquito control operations and report that the latest 100 hectare treatment of swamps for salt marsh mosquito breeding around Darwin for the October spring tide achieved excellent control.

Visitors to the branch in October included medical entomologists **Mike Lindsay** from the vector control group in WA and **Scott Ritchie** fro the tropical health unit in Cairns, who held talks with Peter Whelan as part of the North Australian Health Minister's vector advisory group.

CSIRO Sustainable Ecosystems

Alan Andersen, Ben Hoffmann, Kate Parr and **Tracy Dawes-Gromadzki** all presented papers at the International Congress of Entomology in Brisbane in August. **Ben Hoffmann** is continuing with the Yellow Crazy Ant eradication in NE Arnhem Land, and attended the Tramp Ant Workshop in Canberra which aims to create a Threat Abatement Plan for exotic ants in Australia. After ICE, Kate Parr had a tough few weeks away on field trips. The first, to Fraser Island, followed the ICE conference, when she and Alan Andersen were hosted by **Wayne Robinson** and **Peter Collier** (University of the Sunshine Coast). They spent time checking out Peter's Honours fieldwork sites and of course having a good look at the ants too. In September things got a bit more adventurous when Kate accompanied a Masters student (**Lauren Barrow**) from Macquarie University on an ant sampling trip to Purnululu National Park in Western Australia. Kate is co-supervising Lauren's project which is looking at the ants of the Bungle-Bungles in relation to habitat type and fire management. **Tracy Dawes-Gromadzki** has been busy planning an upcoming field trip to Charters Towers. This trip will mark the new phase of the soil biota and soil function Tropical Savannas CRC project that she is leading. The trip will involved the installation of automated data logging system for soil moisture probes that will be installed in different patch types within a grazing experiment to examine the relationships between soil macrofauna assemblages, water infiltration and soil function (and also mean that she can download data for each rainfall event over the wet season while sitting in her air conditioned Darwin office).

Tracy DAWES-GROMADZKI
NT Regional Councillor

QUEENSLAND - NORTH

DPI&F Emerald

Alison Shields reports that cotton season is well underway. Planting was delayed by several weeks this year, due to cold weather. This delayed planting seems to have impacted the Silverleaf Whitefly, as numbers are significantly lower than they have been in previous years. The entomology team is busy collecting data which will allow for better timing of chemistry to control whitefly. They're also doing trials to assess yield impact of whitefly feeding on crops. They've had 6 inches of rain – which, for Emerald, is a massive amount!

DPI&F Cairns

Jane Royer is still spending part of her time sorting through Yellow Crazy Ant (*Anoplolepis gracilipes*) monitoring samples from Edmonton. Yellow Crazy Ants were detected in the southern suburb of Cairns in May last year and a control plan led by the Department of Natural Resources, Mines and Energy has been underway since. The area has been quarantined and there have been several rounds of baiting with fipronil fishmeal bait. Numbers are falling, though with the onset of the wet season queen production has boomed. Luckily the queens don't partake in mating flights and are limited to finding new nesting sites on foot. Surveillance indicates that the population has been contained.

NAQS Mareeba

In early November **Kerrie Huxham** and **Barbara Waterhouse** travelled to Torres Strait to carry out a short survey on two islands and to provide training for our Quarantine staff prior to the wet season. Also **Judy Grimshaw** travelled to Kokopo in East New Britain (PNG) to represent NAQS at the 2nd Plant Protection Conference, she presented a joint paper on the Role of NAQS in early detection of plant pests in PNG and northern Queensland and the effectiveness of the assorted responses that had been facilitated by these early detections. For those who don't know where Kokopo is, it is just south of Rabaul and the site to which many people and most businesses relocated after the eruption of two of the volcanoes around the harbour, one of these 'vents' is still puffing away gently and there was a small earth tremor during the Conference. In mid November Judy and Barbara participated in a meeting of NAQS scientific staff, which provided an opportunity to meet up with **Glenn Bellis** and **Tony Postle** from our Darwin and Broome offices, while Kerrie returned to Torres Strait to deliver further training for a new staff member in the Thursday Island office. In early December **Donna MacLeod** participated in a joint (with DPI&F staff) survey of some properties in the Daintree to Cape Tribulation area. We are now 'steeling ourselves' to respond to the regular seasonal incursion of exotic fruit flies into the Torres Strait.

Jane ROYER
North Queensland Regional Councillor

QUEENSLAND - SOUTH

NRM

Natasha Riding and **Andrew Clark** visited north Queensland to release and check lantana biocontrol agents. They found *Falconia intermedia* at eight sites,

including one site where it is starting to disperse. They found the rust *Prospodium tuberculatum* at four sites and released it at another 30 sites. Hopefully with the recent rains, the rust will establish at most of the sites.

Michael Day travelled to Samoa and Fiji as part of an ACIAR-funded project development visit. Michael met with various government agencies to discuss a possible biocontrol project on *Mikania micrantha*. He also viewed numerous infestations in plantations and small holder farms. *M. micrantha* is a Class 1 weed in Queensland and is part of a National Eradication Program.

Michael DAY

DPI&F

Chris Freebairn, with help from **Geoff Waite**, is working hard to fill the gap left by **Dan Smith's** passing. Continuing projects include IPM in passionfruit; importation of *Aphytis chionaspis* from Thailand via South Africa for biocontrol of mango scale, *Aulacaspis tubercularis*; IPM in citrus at Emerald; integratable new chemistry for citrus IPM; South African Citrus Thrips in Australia - identity pest status and control, and predatory mite mass rearing and release systems development. At last count Chris was found to have 13 plant and 19 insect species in culture; he needs only a few more before he can claim the prestigious 'Ark discount' with Biological Travel Services - the recently launched new wing of Virgin Blue.

Tony Burfield and **Gabriella Caon** from South Australia visited the Lockyer Valley and Bundaberg areas in November to check on the Western Flower Thrips (WFT) situation in Queensland. They met DPI and Crop Tech staff involved in the WFT technology transfer project, spoke at several workshops, and inspected planthouse and field crops in each area.

From Toowoomba DPI&F, principal entomologist **David Murray** said in-crop infrared spy cameras showed mice eating *Helicoverpa* (heliothis) larvae, Australia's major cropping insect pest. Dave said "When large heliothis larvae have finished feeding on the crop, they drop to the ground and wander over the soil surface searching for a suitable site at which to burrow down and pupate. Larvae are vulnerable to predation during this period of wandering".

In trials supported by GRDC, four digital surveillance cameras with infra-red lighting were set up to record night feeding on heliothis at seven Darling Downs sites of rain-grown crops of maize, mungbeans, sorghum and cotton. The trials involved tethering large heliothis larvae within the area covered by the cameras and playing back the results. Last autumn, the cameras caught frogs, carabid beetles, earwigs and centipedes eating heliothis larvae, but mice by far were the most prolific larvae feeders.

"The five larvae we'd put out below each camera at sunset disappeared within two hours or sooner, and the cameras at all seven sites showed mice were the main reason," he said.

Murray said the activities of predators seemed to have a had an impact on heliothis numbers this spring, although the situation had also been helped by fewer host weed and crop plants because of dry weather.

The research is part of an on-going project to find what influenced heliothis numbers on the Darling Downs and the relative importance of these influences. The research is linked with heliothis integrated pest management (IPM) that aimed to achieve acceptable control of the pest with the minimum use of insecticides. **Jamie Hopkinson** and **Richard Lloyd** were also involved in this work. (Adapted from DPI&F press release).

In December, **Bernie Franzmann** was awarded his PhD, "Resistance to sorghum midge and management of panicle pests in sorghum" from The University of Queensland.

Jamie Hopkinson was awarded a PhD scholarship to study aphid biocontrol in cotton with funding from CRDC.

Dave Murray is attending the Beltwide cotton conference in New Orleans presenting a paper on "Areawide management of Heliothis in the Darling Downs". Joint authors include **Melina Miles**, **Austin McLennan**, **Jamie Hopkinson** and **Richard Lloyd**.

Brad Scholz and **Nathaniel Parker** are continuing their work in *Bt* cotton, in particular the impact of crop layout on the effectiveness of natural enemies.

Kristen Knight has been very busy monitoring mungbean crops for mirids, sampling daily for 30 days in the subtropical heat as part of her work in pest management in pulses.

After 3 months travelling in South America and Europe, **Adam Hardy** returned to implement the midge, *Stenodiplosis sorghicola*, ratings program for commercial sorghum varieties.

Bronwyn WALSH
South Queensland Regional Councillor

SOUTH AUSTRALIA

South Australian Research and Development Institute

Dennis Hopkins reports that it has been a big year for *Helicoverpa* damage (heliothis) in many field crops. There were large and early flights of this moth this spring and this has caught some growers and crop monitors off guard. Poor timing of treatments,

often too late, has led to very significant damage in pulse crops. Most canola crops were sprayed but in the last week of October there were reports of *Helicoverpa* damaging cereals. Damage in cereals in SA is unusual and has only occurred in one or two years over the last thirty years.

Cathy Smallridge and **Vanessa Bosco** visited NSW Ag in Sydney in early October to inspect the Queensland fruit fly rearing facilities at Gosford and Camden. These facilities provide sterile fruit flies for use in eradication programs in Adelaide and there is currently a push to improve the "quality" and hence effectiveness of these flies. The Fruitfly research team recently submitted a final report to HAL on the sterile insect program for Medfly.

Greg Baker, **Nancy Schellhorn** and **Dijana Jevremov**, the DBM team, spent Oct 20th in Sydney to update the National Brassica R&D Committee on the progress and future plans of the DBM project. The fifth DBM newsletter was published and circulated in October and includes a chart insert which provides information on the impact of a range of insecticides on the natural enemies of DBM. **Cal Welbourn**, from the Florida State Department of Agriculture, visited Greg Baker and **Peter Crisp** to assist with the identification of prostigmatid mites collected from Riverland citrus orchards.

Tony Burfield and **Gabriella Caon** spent a week in Queensland from Nov 15 to 19 as part of a program on the Integrated Pest Management (IPM) of vegetable crops. As part of his role as National IPM Coordinator (Western Flower Thrips), Tony coordinates activities in SA, Qld and NSW. Tony and Gabriella visited the Gatton and Bundaberg regions looking at vegetable production and pest problems and worked closely with Queensland DPI Entomologist **Ian Kay** and Industry Development Officer **Matt Dent**. The pest profile in Queensland is similar to that recorded in the Virginia area of SA so much of the information gathered from this area over the last four years will be very relevant to Queensland.

The broad acre snail team led by **Megan Leyson** has made the first releases of the parasite, *Sarcophaga penicillata*, targeting the Small Pointed Snail in the southeast at Mount Benson. Survey work for the 2004-05 summer season started in November to determine the impact of the parasite against the Pointed Snail on York Peninsula.

The *Etiella* project run by **Chris Krawec** has just completed a very busy field and lab trial season. Three light traps were run on York Peninsula and in the mid north from September to late December to monitor the timing and intensity of *Etiella* moth flights and catches are still being sorted. This data

Dennis Hopkins at the SARDI Christmas bash receiving his "Executive Gong", complete with very detailed instruction on gong etiquette

Kym Perry sporting an *Etiella* theme hat, a definite winner at the SARDI Entomology Melbourne Cup Lunch

will be used to further fine-tune the temperature based prediction model developed early in 2004. Some larval behavioural studies recently conducted in the laboratory have confirmed that newly hatched *Etiella* larvae burrow into lentil pods within 24 hours of hatching. This means there is very limited scope to target the adult moths with pesticide prior to initiation of egg production. A pesticide trial conducted this spring has shown it is possible to control *Etiella* moths such that larval damage to seed is reduced to below the 1% damage threshold set by the lentil industry.

The University of Adelaide

John Jennings was recently on New Caledonia on a second honeymoon with partner Beverly. In between site-seeing, he managed to collect some new species of hyptiogastrine and stephanid wasps, the latter not previously recorded from New Caledonia. The Centre for Evolutionary Biology and Biodiversity has seen the beginning of several new projects and substantial progress made on continuing programs in the last few months. **Steve Griffith** has started an honours project looking at the interaction among ants, homopterans and *Acacias* in the Flinders Ranges. **Danielle Carey** has started some preliminary work for her honours project on the evolution of wing reduction in baeine scelionid wasps that parasitise spider eggs. **Nick Murphy** has completed his postdoctoral work on the evolution of lycosid spiders in Australia and shifted his attention to the phylogeny of the Scelionidae and Platygastrida.; **Michelle Guzik** is now well into her ARC Linkage postdoctoral project on the phylogeography of stygofauna and is focussing on the incredible underground diversity of dytiscid beetles associated with calcrete aquifers in south-western WA. PhD student **Kate Muirhead** has recently returned from a major field trip to northern Queensland where she has been undertaking biological studies of a putative native *Cotesia* wasps that parasitises the larvae of *Bathytricha truncata* feeding on sugarcane. PhD student **Tim Moulds** has attended an international speleological conference in India and presented a paper on the ecology of guano-associated invertebrates at the Naracoorte World Heritage Caves. PhD student **Cate Paull** has not had any trouble finding large enough numbers of light brown apple moth and its parasitoids associated with Coonawarra grape vines for her last field season. **Nick Stevens** is making good progress in the early stages of his PhD on the systematics of agathidine braconid wasps, while **Claire Stephens** is in the final stages of writing up her PhD on parasitoid communities in weed and non-weedy native vegetation.

Two PhD students have recently left the lab to take up employment - **Sylvia Clarke** who has been working on the ecology of ants in the Flinders Ranges has started a job as a field ecologist with CALM and is based in Kalgoorlie, while **Travis Gotch** who has been working on the ecology of mound springs spiders has accepted a position with the Arid Areas Water Catchment Board and will be moving to Roxby Downs in January to continue his work on the springs, focussing on their conservation and management.

Andy Austin was in Copenhagen to examine a DSc thesis and the UK to visit the Natural History Museum during November, and has been getting ready for the new named degree in Evolutionary Biology at Adelaide University which starts in 2005.

Waite Insect and Nematode Collection (WINC):

John Jennings reports that the WINC database has now passed 50,000 entries, mostly agriculturally significant pest groups. This amounts to about 10-15% of the collection, and has been carried out over the last two or so years be a whole host of casual staff on behalf of the Australian Plant Pest Database, Plant Health Australia.

Kangaroo Island LTER: Australia now has a fifth LTER (Long-Term Ecological Research site) which includes the whole of Kangaroo Island as well as smaller island groups The Althorpes and The Pages. It is believed that at about 500,000 ha, the KI LTER may be the biggest LTER site in the world. The KI LTER is a co-operative convened by John Jennings, and membership includes The University of Adelaide, SA Dept. of Environment and Heritage, SARDI, CSIRO Soils, SA Museum, Royal Society of SA, SA Plant Biodiversity Centre, and KI Natural Resource Management Board. As with similar sites in Australia (e.g. The Warra LTER in Tasmania), it is intended that the KI LTER will coordinate and/or promote a whole range of ecological research, including invertebrate monitoring. More information can be found on AFFA's website: http://www.affa.gov.au/content/output.cfm?ObjectID=C6851103-6AEC-4A18-807C0C629BB47E84

Glenys WOOD
SA Regional Councillor

TASMANIA

Forestry Tasmania

Simon Grove has just completed a report on one aspect of a long-term study on the effectiveness of wildlife habitat strips as a conservation measure in

areas of native wet eucalypt forest. Carabid beetles were sampled prior to harvesting (by clearfelling) and were compared with samples from the same set of locations in the decade after harvesting. A nearby unharvested area served as a control. Comfortingly (and, it must be said, far from typically) the carabid fauna of the control area remained essentially unchanged over this time. The fauna of the harvested area changed dramatically - though there is nothing in the data to support the idea that recent clearfalls are 'ecological deserts' as species richness increased considerably. Of more conservation interest is the fate of the wildlife habitat strips, which are strips of mature forest only about 100 m wide, left in clearfalls at the time of harvest. Their purpose is to maintain connectivity with nearby reserves of mature forest, as well as to allow the survival of mature forest species in areas otherwise dominated by younger successional forest arising from clearfelling. This study showed that, for carabid beetles, they are so far managing to maintain mature forest assemblages, though individual plots showed more variation compared to the control area, suggesting some ecological perturbation. It remains to be seen whether the strips will continue to function as well over coming decades, and how effective they will be as sources of colonisation of the surrounding forest as it matures. One of Simon's other areas of research continues to be the ecology and dynamics of coarse woody debris. This summer, he is being ably assisted by **Lee Stamm**, a recent forestry graduate from Southern Cross University employed by FT as a 'summer student'. We aim to better characterise the relationship between rotten wood type and decay class. The former has great ecological significance (e.g. for insect and fungal assemblages) but the latter is what is normally measured and modelled by those interested in understanding CWD dynamics and for carbon accounting.

Dick Bashford reports that a demonstration site at Bell Bay in northern Tasmania, established for the early detection of exotic forest insects and diseases, is now functional. Dick has also been involved in a consultancy that has seen the establishment of 100 static pheromone traps in the suburbs of Perth (WA, not Tas), to monitor the spread of the European House Borer, *Hylotrupes bajulus*. Dick recently attended the Research Working Group 7 (Forest Health) meeting at Karri Valley, Western Australia, with **Tim Wardlaw**.

For **Jane Elek**, it has been all go since returning from a terrific ICE. The weather or some other factor has been just to the insects' liking this year (if anyone can tell Jane what it is she would be very grateful). This means that insect pests in our eucalypt plantations have been at their highest levels since she started with FT 10 years ago - a ten year cycle perhaps? So most of Jane's time in early summer has been spent 'fire-fighting' to protect the plantations from defoliation. Hopefully things will ease to allow time to test out some new, 'softer' chemicals and methods of application so we do not need to aerially spray in the future.

University of Tasmania School of Agricultural Science/TIAR/CRC for Sustainable Production Forestry

Geoff Allen returned from a successful nine month sabbatical in late November. The majority of his time was in Canada at SFU with **Bernie Roitberg** (working on ladybirds) and Arizona at ASU with **John Alcock** (tarantula hawk wasps). However, in the process of returning he also spent some briefer time with **Paul Schmid-Hempel** at ETH in Zurich, Switzerland (to complete bumblebee research) and **Keiji Takasu** at Kyushu University in Japan. **Luke Rapley** was awarded his PhD in December and is currently working as a post-doc in forest entomology. **John Brown** (Washington State University) made a research visit to Hobart in late November and early December to discuss forest insect management using pheromones. Now having MAF importation approval we are currently working with NZFRI in the collection of nominated parasitoids for the biocontrol of *Uraba lugens* in New Zealand as well as aiding in pheromone trials planned for 2005. This work also involves collections of parasitoids in South Australia enabling Geoff to return to the scene and research insects of his PhD, now so long ago! In late December the bid for a new CRC (Sustainable Forest Landscapes) was successful and the next six months will see much activity in negotiating research and funding allocation. Though there is anticipated to be a less prominent role for pest management than there was in the CRC SPF, there will be an increased emphasis on biodiversity issues for entomology research. Finally, a new post-doc position in forest insect chemical ecology, funded through an ARC linkage grant, is to be appointed by February 2005 (closing date for applications 8 February).

Meanwhile, **Marie Yee** is almost ready to submit her doctoral thesis on 'the ecology and habitat requirements of saproxylic beetles native to Tasmanian wet eucalypt forests: potential impacts of commercial forestry practices'. Marie's will be the first of a series of related studies to reach this stage. Others, by **Anna Hopkins**, **Kate Harrison** and **Yoav**

Bar-Ness, will follow within the next year or two. All look at different aspects of the relationship between tree or log age, biodiversity (invertebrates and/or fungi) and forestry, and involve fieldwork at the Warra Long Term Ecological Research Site (see www.warra.com).

DPIWE Diagnostic Services (Plant Health Group)
Lionel Hill is working with **Paul Horne** and **Jessica Page** of IPM Technologies and **Sandra McDougall** of NSW DPI to develop IPM for lettuce in light of the arrival of the currant lettuce aphid *Nasonovia ribisnigri* in Australia. The aphid lives in the heart of lettuce, protected from traditional insecticides. Industry response to the arrival of the aphid has been to adopt almost universal drenching of seedlings in imidacloprid.
The project is funded by HAL. Early results are good, with lettuce being sold on the commercial market from the first two of nine sequential adjacent plantings. Brown lacewing, 11-spotted ladybird, transverse ladybird and *Melangyna* hoverfly are providing high levels of control and suggest that imidacloprid drenching is not universally necessary. Frequent small field days with growers are a major feature of the project giving growers the opportunity to interact with Paul, Jessica and Sandra as the crops progress.
Penny Domeney (Grove Research Station IPDM office) is working on an earwig control trial at Glen Huon. New and old methods of deterring earwigs from going up the tree trunks are being compared. The trunk barrier treatments are as follows: **Tanglefoot** – a sticky grease-type substance applied by caulking tube,. prevents insects from climbing the trunk by getting stuck in the grease, or by repelling them. **Teflon band** – a 10cm band adhesive on one side and frictionless on the other, preventing insects from climbing up trunks by making the surface too smooth to get a foot-hold. **SuSCon Blue Band** – a 4cm wide plastic band infused with chlorpyrifos (Lorsban). Under trial by CropCare, adapted from SuSCon ribbon used underneath banana bags, and preparing for registration in citrus orchards as a control of ants in IPM programmes. **Calypso butt spray** – trunk spray of thiacloprid as a repellent to earwigs.
The results so far are fairly disheartening - there are earwigs residing in traps in all the trees so far. At 400 m above sea level, maybe the Tanglefoot is not sticky enough to deter or stick earwigs at all, but still manages to gather enough wind-blown trash that makes a bridge over the grease. Although ants did not like walking on the Teflon band when it was new, they were still able to climb over it if they had to (presumably so would earwigs). Once a spray or

Paul Horne discussing contents of a vacuum sample from lettuce at field day

two had passed through the orchard, there was enough residue dried on the band to make it quite passable to any insects that needed to travel up or down the trunk. SuSCon Blue band did not provide enough contact over the 4cm width to have much effect on earwigs, even though most earwigs found in the trees were juveniles and more likely to be overcome. The Calypso butt spray did not seem to have any repellant effect once it dried, and certainly no contact effect on earwigs could be expected after a week or two, as one of its IPM recommendations is that it has a low residual effect. The foliar treatments in the trial are still to be applied. They will be Calypso compared with Lorsban as foliar sprays. Calypso may still prove to be an effective cover spray for earwigs that is relatively IPM-friendly. However, it will still not be available to fruit destined for export, as most overseas markets have nil tolerance for thiacloprid in their MRL programmes.
Southern Tasmania now has a permanent Quarantine Entomologist within DPIWE, with the appointment of **Catherine Young** at the New Town Laboratories. Cathy completed her PhD in 2003 at the University of Tasmania after returning to study as a mature age student. In this study she described all life cycle stages of more than 100 Australian

Plesanemma altafucata (Nacophorini, Geometridae)
mature larva, part of Cathy Young's PhD work

geometrid species and constructed a phylogeny for the family using both molecular and morphological data. In 2002 Cathy was invited to attend a forum on geometrid systematics in Germany to present the results of her phylogenetic research and also presented a paper at the recent International Congress of Entomology in Brisbane. Cathy has published several papers on the Australian Geometridae and has a few awaiting publication. So far she has enjoyed the experience of working at DPIWE and especially the opportunity to expand her knowledge on different invertebrate groups and of working in the largest and most comprehensive insect collection in Tasmania. She is also looking forward to using her experience in DNA sequencing in molecular quarantine protocols. Cathy is also keeping her hand in with geometrid systematics by supervising research in this area at the University of Tasmania with **Peter McQuillan**

European Wasps on King Island

European Wasps (*Vespula germanica*) were recorded for the first time on King Island in May 2004. European Wasp has been present in Tasmania since 1959 but did not appear on the mainland until 1977 and, until last year, had not apparently colonised King Island. The closely related English or Common Wasp (*V. vulgaris*) is a relatively recent newcomer to Tasmania, arriving in approximately 1995, but present on the mainland since 1958. Attempts to eradicate European wasps in this early stage of incursion are being coordinated by local community groups with advice and some logisitical support from staff at DPIWE. The public have been made aware of the wasp's presence by publicity from the local newspaper and people have asked to notify local contacts of any sightings. A program of baiting with fipronil will take place in late summer/autumn, as wasp numbers increase. Cathy Young is the DPIWE contact for this project, ph. (03) 62 33 6827, mobile, 0418 5710 64, email, Cathy.Young@dpiwe.tas.gov.au.

Queen Victoria Museum, Launceston, Tasmania

Brian Smith (Curator of Zoology) writes: "the Queen Victoria Museum is the only museum in Australia which is owned, operated and largely funded by the

third tier of government that has a recognised natural history reference collection. Though we get about a third of our funding from the state government, we are owned and managed by the Launceston City Council. However, the collections are secured under the state Museums Act. As a result of us being an active state repository, we have recently received a number of important collections, resulting from long-term monitoring of sensitive ecosystems. The largest is of these collections is of freshwater invertebrates (mainly insects) from rivers and streams around the state, as part of the Monitoring of River Health Initiative. This latest lodgement is of more than 6000 lots with more to come over the next few months. Most of this material is identified to family level, with some down to genus or species. A second collection, lodged at the same time, is of marine invertebrates. This is part of the national Port Survey for marine pests and introduced species and consists of material from the major and some minor ports in northern Tasmania. Some of this material is identified to species but all needs rehousing for long-term storage. This collection would be more than 3000 lots. The other "happening" at the moment is negotiations to try to survey the lagoon system and associated wetlands on the eastern end of Cape Barren Island, part of the Furneaux group of islands at the eastern end of Bass Strait. Some grant funds are available and it is hoped to carry out a preliminary trip in the next couple of months. This is part of a wider investigation of estuaries and lagoon systems across the north of the state."

Simon GROVE
Tasmania Regional Councillor

WESTERN AUSTRALIA

Western Australian Museum

During December, the move of all dry collections from the Museum's Francis Street building in the centre of Perth to the new Collections and Research Centre in the industrial suburb of Welshpool was completed. The alcohol collections remain to be moved and this task is expected to keep staff of the Entomology Section (and many of their colleagues) fully occupied during January and February. Consequently, the moratorium on loans remains in force and borrowers with existing loans are asked to hold them at least until the end of March. Visitors, unfortunately, cannot be accommodated while the relocation continues.

Terry HOUSTON

CONFERENCES

The 5th Asia Pacific Congress of Entomology and Preliminary Registration

The 5th Asia Pacific Congress of Entomology (APCE2005) will be held in Jeju Island, Korea from the 18-21 October 2005. Please visit the congress web site (<http://www.apce2005.org> for more detail and useful information. This site will be updated as the program develops.

At this stage, they are already accepting the preliminary registration by e-mail and from the website. There is no obligation or payment for the preliminary registration as it is just an expression of interest.

To make the preliminary registration on line: please visit the home page at
<http://www.apce2005.org/pages/Register%20Here.htm>
For the preliminary registered entomologists, they will provide frequently updated information. They will also consider some incentives, such as discounted registration fee, to those preliminary registrants by a certain time.

Professor/Dr. Kyung Seng Boo, Chair - Congress Organizing Committee, e-Mail: inform@apce2005.org
Professor/Dr. Yoohan Song, Secretariat - e-Mail: ysong@gsnu.ac.kr

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